

GIS Technologies for Data Collaboration

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Presentation Outline

- Michigan Statewide GIS Data Systems and Programs
- GIS Coordination Across Organizations
- NENA GIS Standards
- Authoritative Data in Michigan for NENA GIS Data Model
- Additional GIS Data Layers
- 9-1-1 GIS Repository

Michigan GIS Data Systems and Programs

- Michigan Geographic Framework
 - Implemented in 1990s
 - Statewide base mapping
 - Follows national data guidelines
- Michigan 9-1-1 GIS Repository
 - Implemented 2012
 - Aggregated base layers for 9-1-1
 - For 9-1-1 use
- Michigan Open Data Portal
- Michigan Statewide Aerial Imagery and LiDAR Program

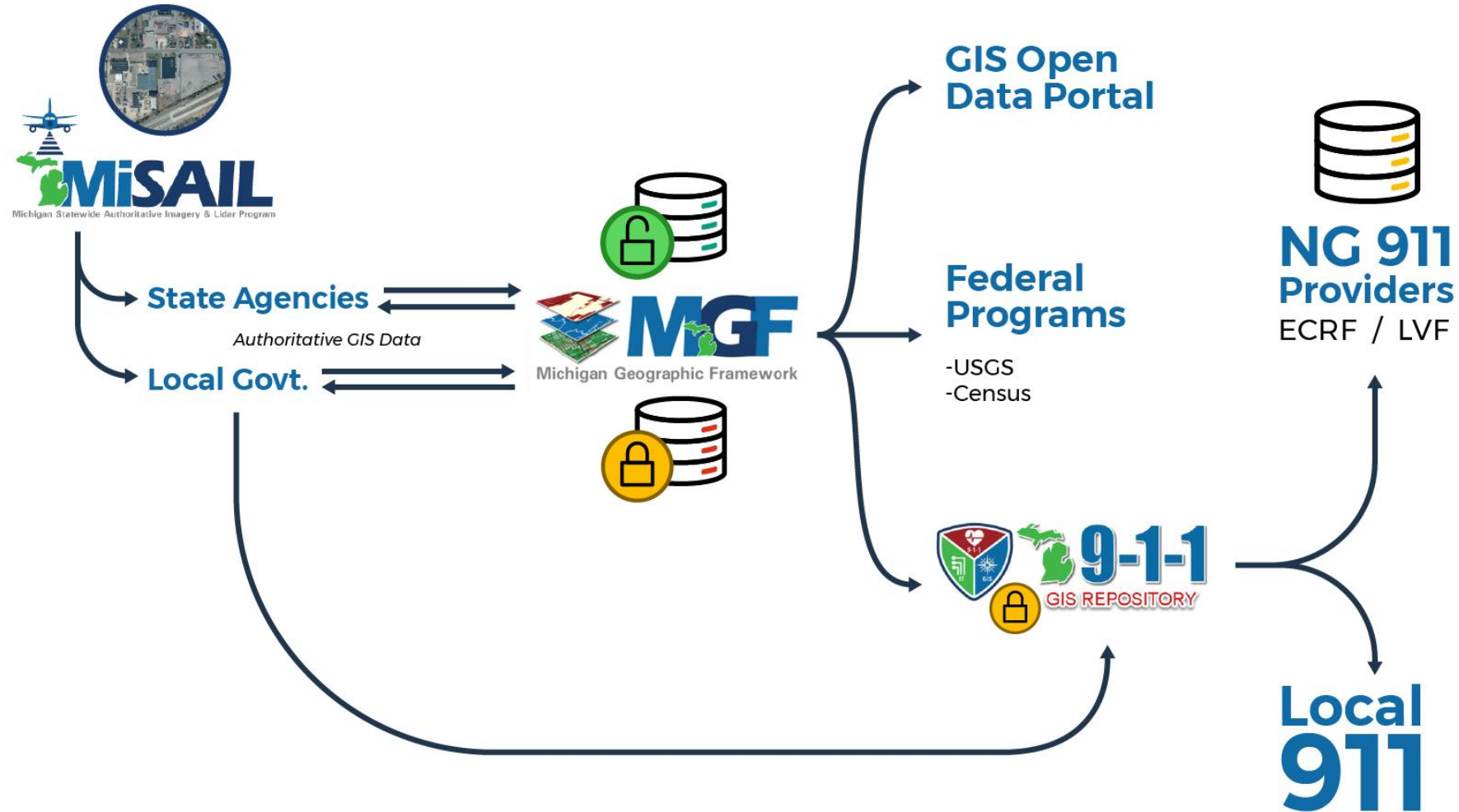


9-1-1 GIS Repository

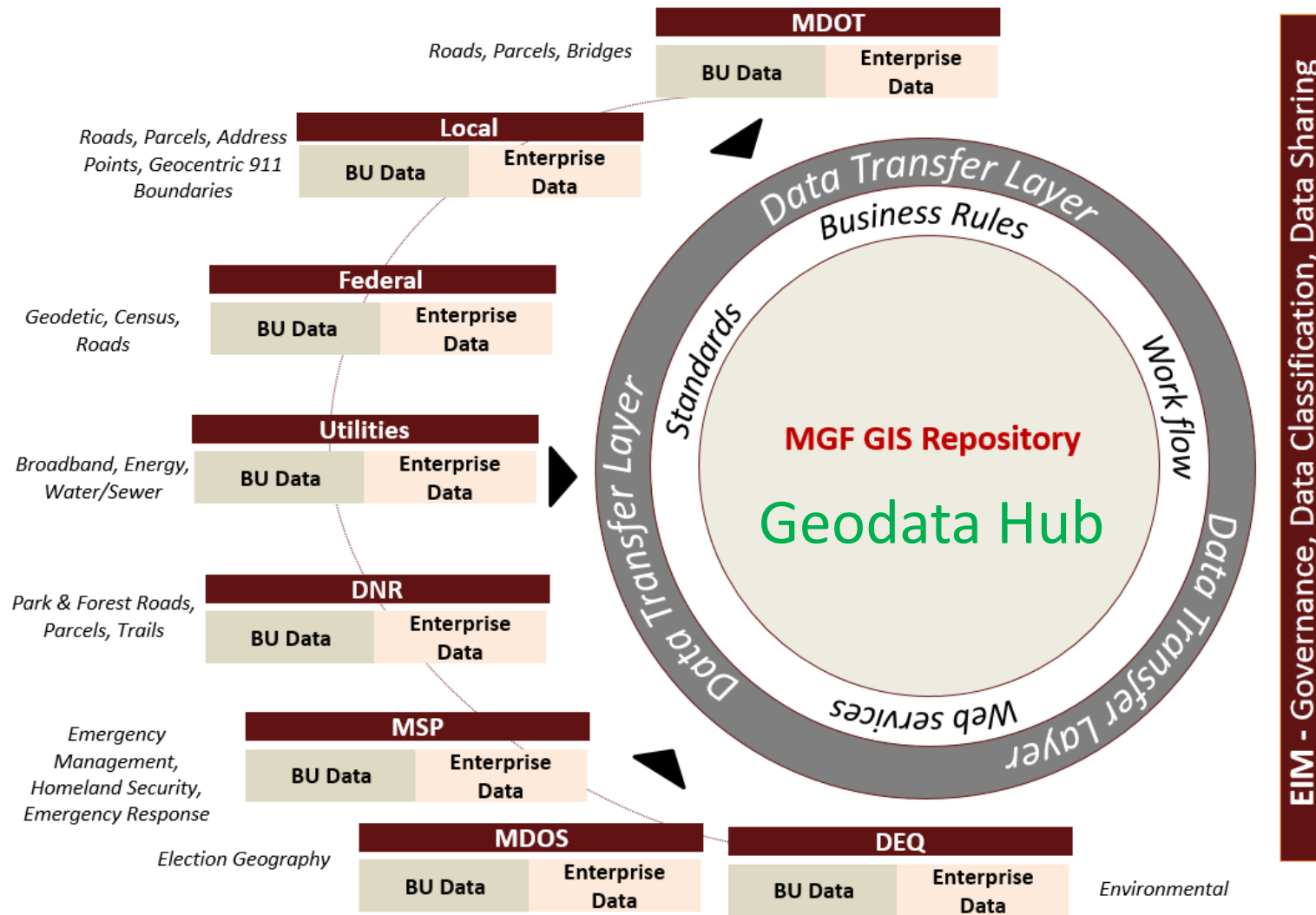
- Created a central 9-1-1 GIS Repository
 - Enabling PSAPs to share GIS information
 - Establishing MOAs
 - Setting standards for GIS data exchange
 - Framework for NG9-1-1 call routing
- Statewide Public Safety Answering Point (PSAP) Boundary Layer
- Statewide Road Centerline Layer
- Address Points and Emergency Service Zone layer schemas



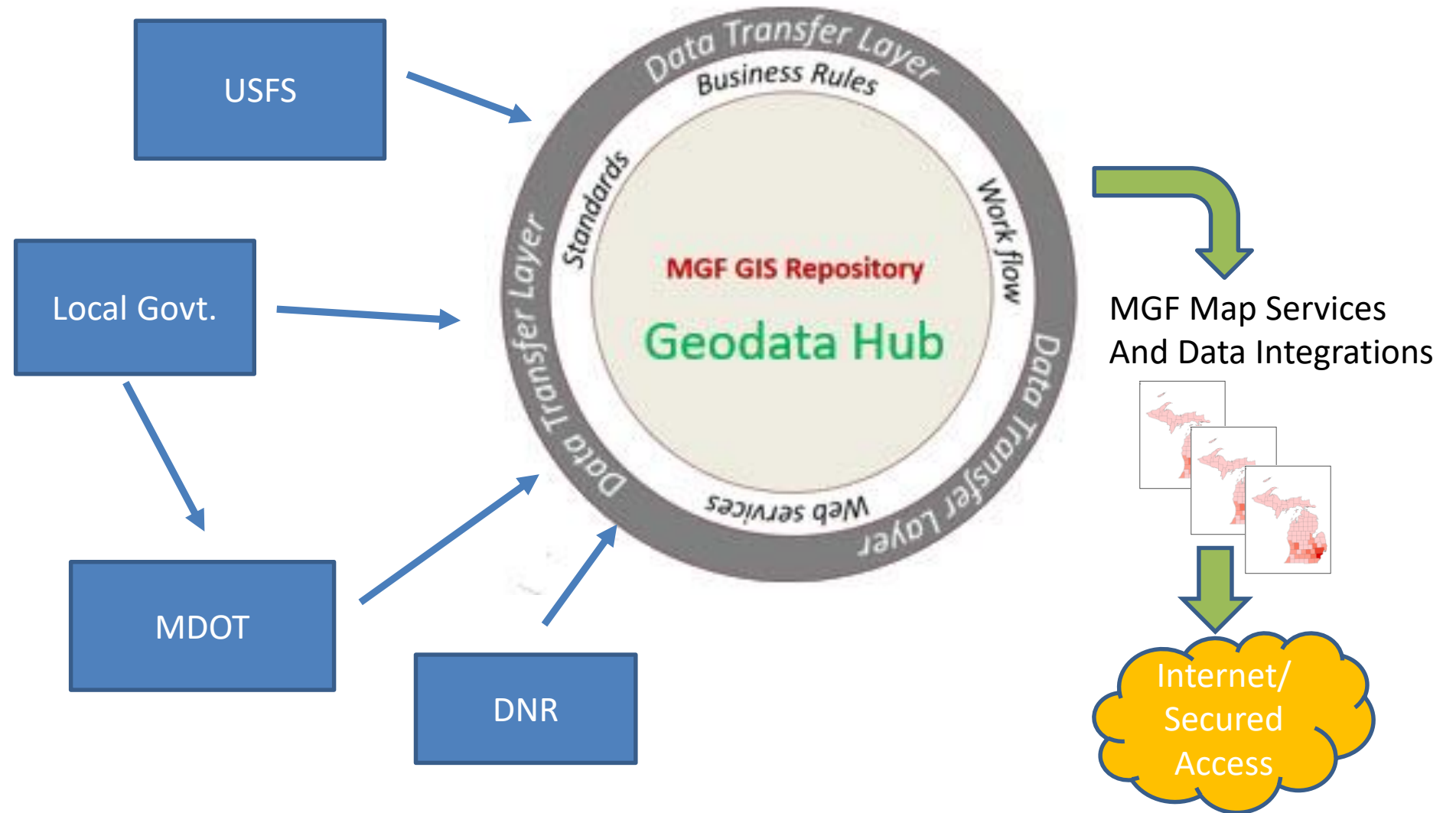
GIS Coordination and Integration



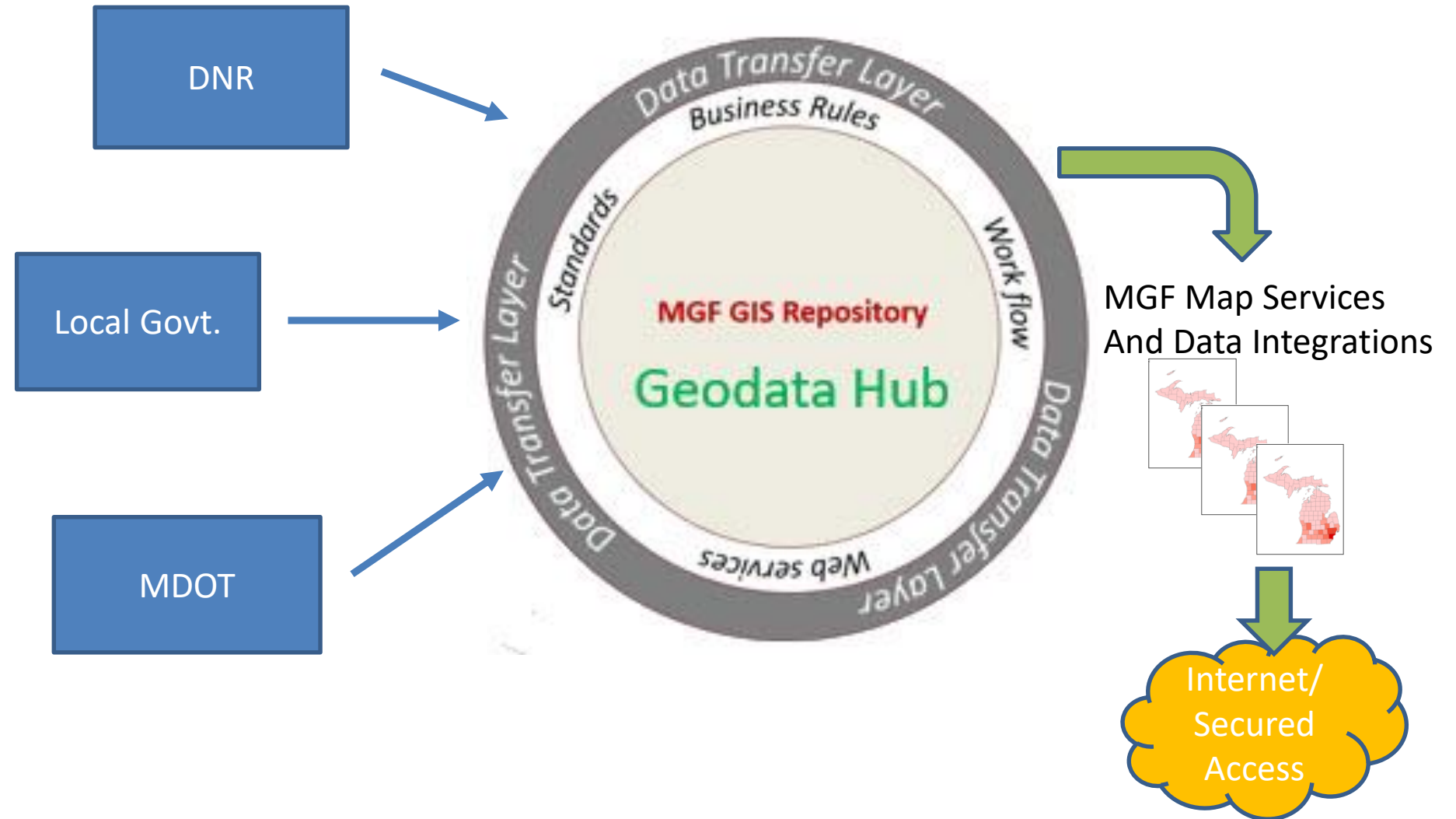
MGF Distributed Editing Data Hub



MGF Road Centerline Data Flow



MGF Culvert Data Flow



Trending Topics about GIS Data for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard outlines recommended GIS data
 - Released June 2018
- Continued standardization, validations and updates are common themes
- Notifications and error resolutions are key considerations

Other notes GIS in Michigan:

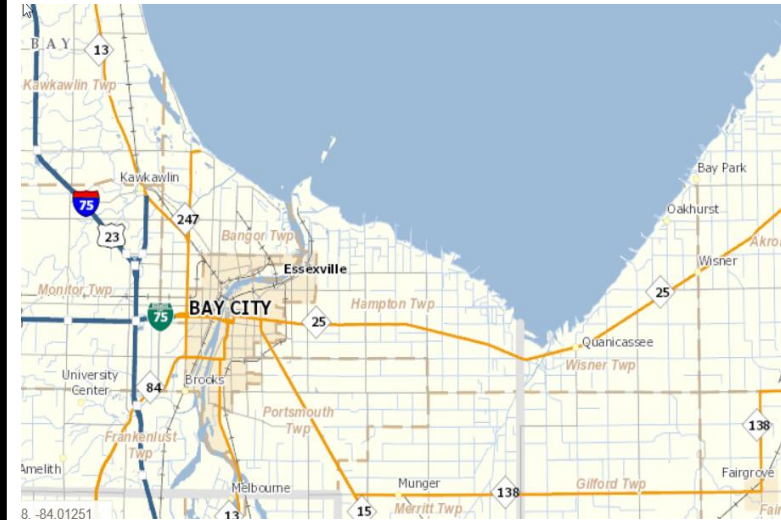
- Michigan is one of leading states for GIS data coordination
- Michigan one of few states without some key statewide GIS layers
- Trends of open data across the nation

GIS Data Standards for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard - Required Layers

REQUIRED – These layers MUST be available for the ECRF and LVF to function, and are required for call taking and dispatch operations:

- Road Centerlines
- Site/Structure Address Points
- PSAP Boundary
- Emergency Service Boundary (this MUST include Law, Fire, and Emergency Medical Service (EMS) as separate layers)
- Provisioning Boundary



Authoritative sources for Michigan:

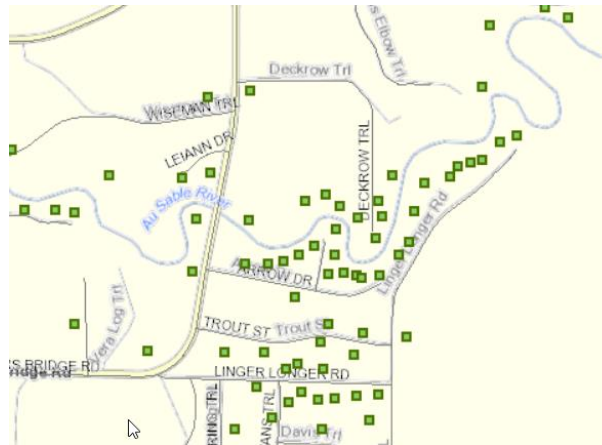
- GIS Centerlines for 9-1-1 – Local Govt (via 9-1-1 repository)
- Site Address Pts – Local Govt. (via 9-1-1 repository)
- PSAP Boundaries – MGF (provided by local govt/via 9-1-1 rep.)
- Emergency Response Layers (Fire, Police, EMS) – Local Govt

GIS Data Standards for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard - Strongly Recommended Layers

Strongly Recommended – These layers may aid in the functionality of the ECRF and LVP and are strongly recommended for call taking and dispatch operations:

- Street Name Alias Table
- Landmark Name Part Table
- Complete Landmark Name Alias Table
- States or Equivalents
- Counties or Equivalents
- Incorporated Municipality Boundary
- Unincorporated Community Boundary
- Neighborhood Community Boundary
- Other Emergency Service Boundaries (these MAY include, but are not limited to, Poison Control, Forest Service, Coast Guard, Animal Control, etc.)



Authoritative sources for Michigan:

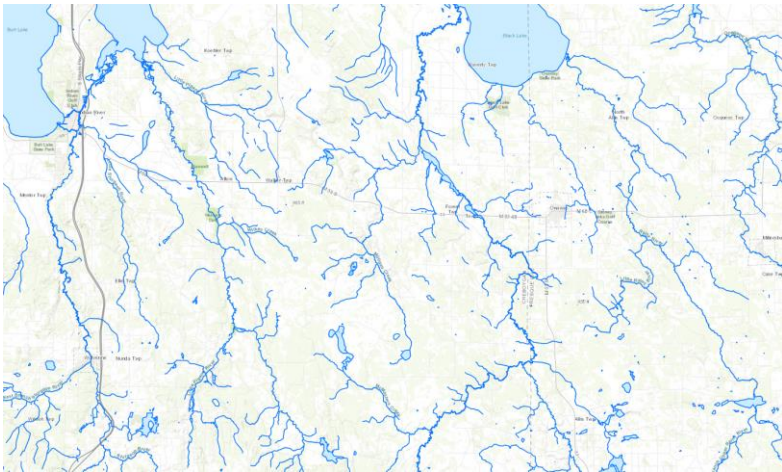
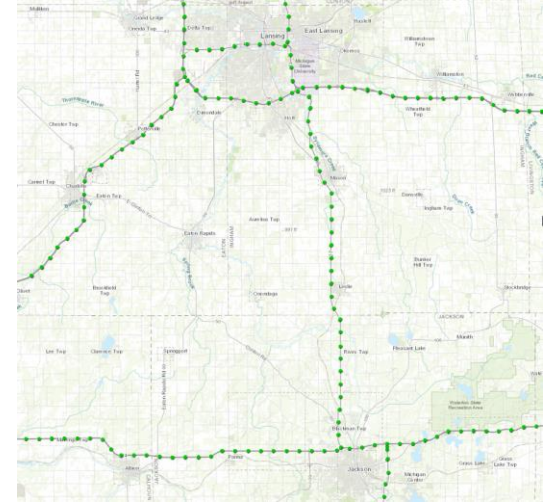
- Landmarks – Local Govt. and MGF
- Street Name Alias Table – Local and MGF
- Boundaries
 - State – MGF
 - County – MGF
 - Townships – MGF
 - City – MGF
 - Villages – MGF
 - State Parks – MGF (DNR)
 - State Forests – MGF (DNR)
 - National Forests – USFS

GIS Data Standards for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard - Recommended Layers

Recommended – Other layers in this document that complete the minimum recommended GIS data for NG9-1-1 and E9-1-1 call taking and dispatch operations:

- Railroad Centerlines
- Hydrology Line
- Hydrology Polygon
- Cell Site Location
- Mile Marker Location

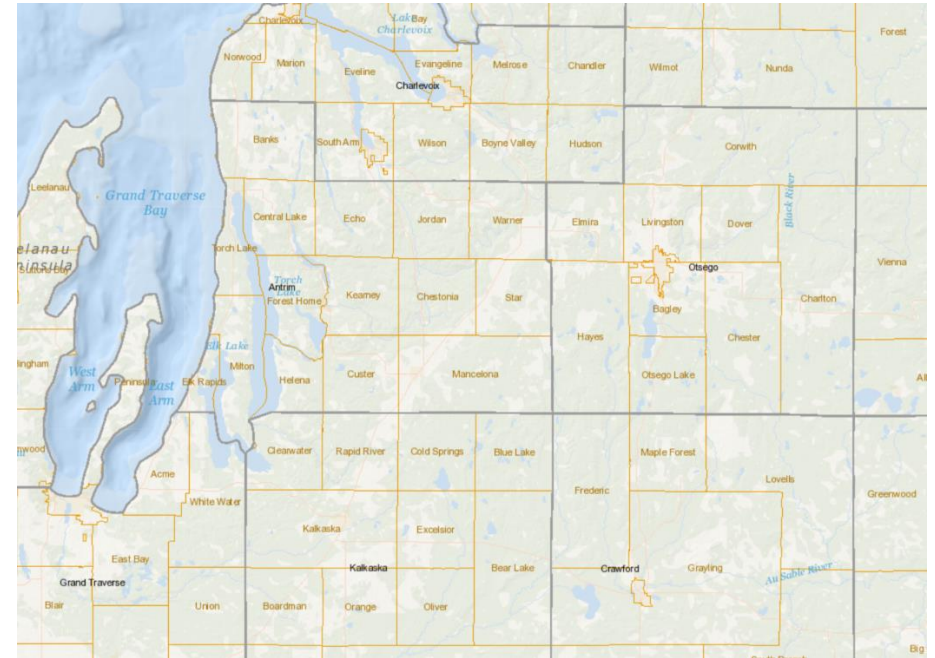
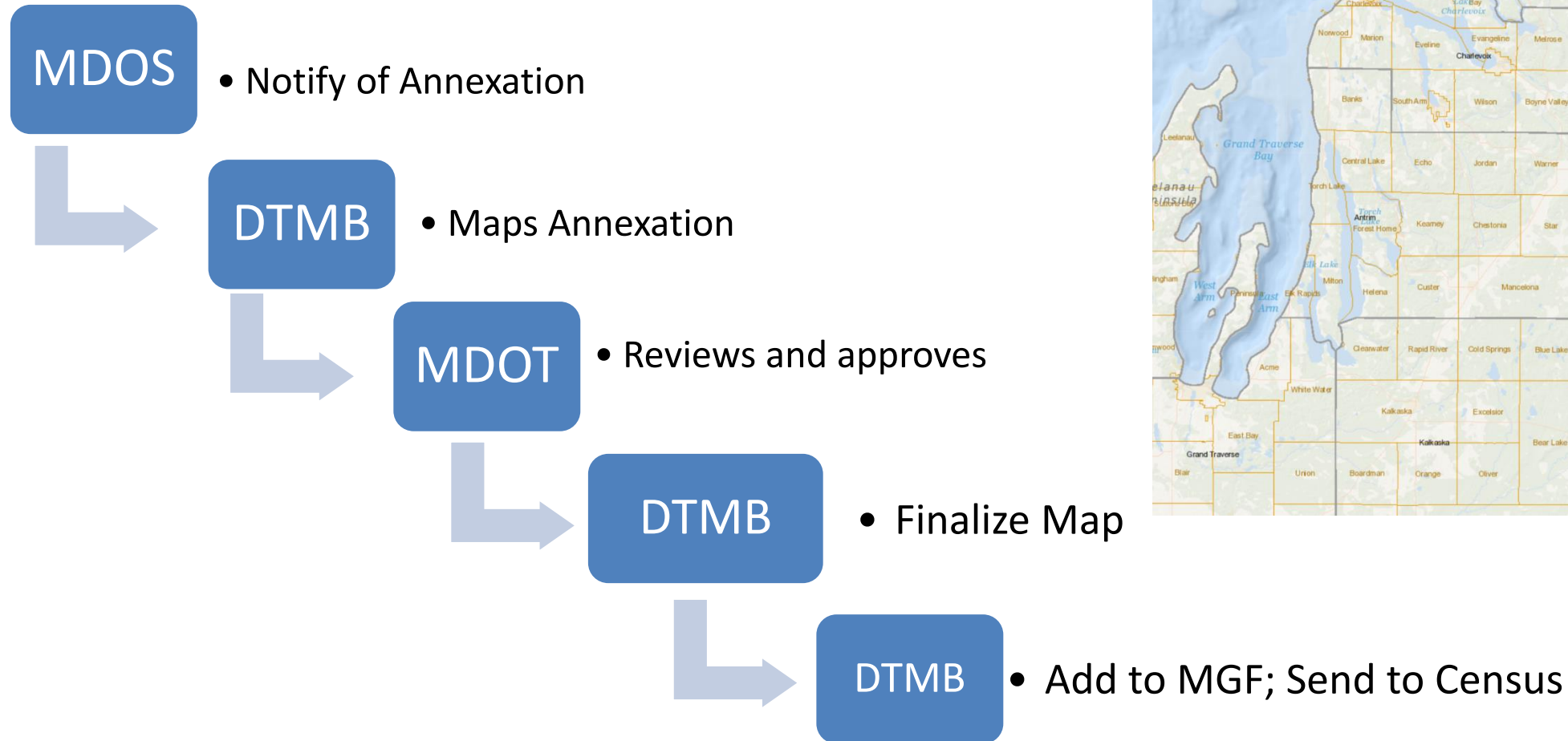


Authoritative sources for Michigan:

- Railroads – MGF (MDOT)
- Hydrography Line – MGF (NHD Model)
- Hydrography Polygon – MGF (NHD Model)
- Cell Site Location – TBD
- Mile Marker Location – MGF (MDOT, Local)

Michigan GIS Data Flows

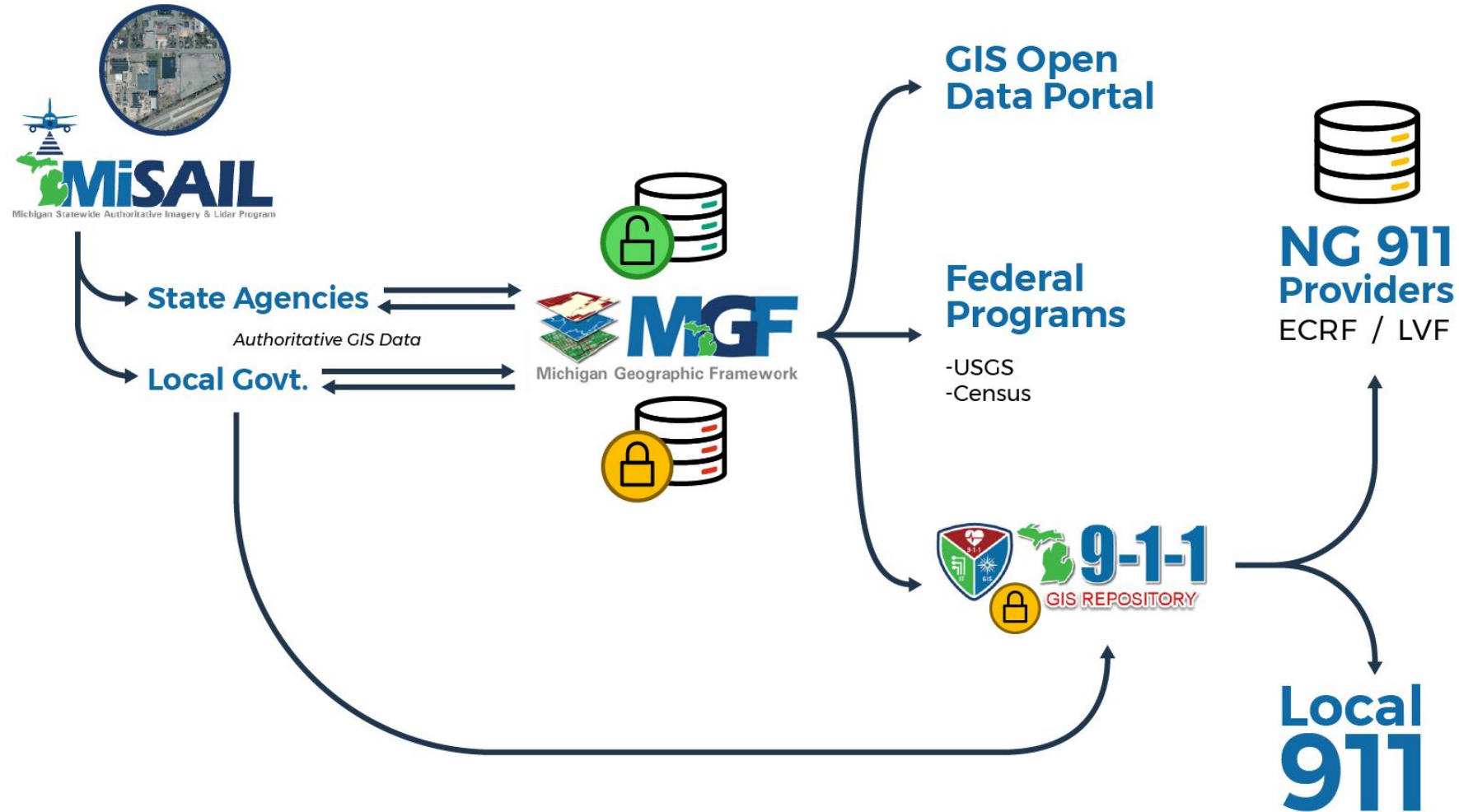
- Michigan Geographic Framework Boundary Update Flows



Michigan GIS Data Coordination

- Michigan Geographic Framework Authoritative GIS Data
 - Additional Data
 - Trails
 - Hospitals
 - Surgical Outpatient Facilities
 - Nursing Homes
 - Psychiatric Hospitals
 - Schools
 - Child Care
 - Adult Foster Care
 - Substance Abuse Disorder Care
 - Wells
 - Other Layers of Interest

GIS Coordination and Integration



Michigan GIS Open Data



Data Categories



MI Geographic Framework



Boundaries



Demographics



Fish & Wildlife



Hydro



Geology



Environment



Elevation



Transportation



Public Health

9-1-1 GIS Repository

- Import GIS data into repository
 - Field mapping to repository standard
 - QA/QC tools to validate data and downloadable report
- Export tool
 - Export data back out to your data schema
 - Export other PSAPs data (need export permission from PSAP)
- Data Viewer
 - PSAPs can use viewer as a mapping tool
 - Search, measure, aerial imagery, topographic images
- Backup of data and securely accessible outside of PSAP



[Michigan.gov](#) | [MSP Home](#) | [FAQ](#) | [Online Services](#) | [MSP Site Map](#) | [Contact MSP](#)

911 GIS Data Repository

Search an address, city, zip, and more

Workflow

Listed below are tasks that were created by your edits to the geography or by changes other users have made that need your approval.

Task	Step	Status	Date	Update
Export	End	Complete	03/11/2019	[icon]
Export	End	Complete	01/25/2019	[icon]
Export	End	Complete	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Pending	01/25/2019	[icon]
Export	End	Complete	01/22/2019	[icon]
Export	End	Pending	01/22/2019	[icon]
Export	End	Pending	01/16/2019	[icon]
Export	End	Pending	01/10/2019	[icon]
Export	End	Abandoned	01/10/2019	[icon]
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Export	End	Pending	01/10/2019	[icon]
Export	End	Complete	12/05/2018	[icon]
Export	End	Complete	12/05/2018	[icon]
Export	End	Complete	11/29/2018	[icon]
Export	End	Complete	11/29/2018	[icon]
Export	End	Complete	08/24/2018	[icon]
Export	End	Complete	08/07/2018	[icon]
Export	End	Complete	07/31/2018	[icon]
Export	End	Complete	07/25/2018	[icon]
Export	End	Complete	07/24/2018	[icon]

Select Shapes Clear Selection

☐ Download for whole MI State

- 1 Extract Type:
Map [v]
- 2 Layer to download (*required:*):
Required Select [v]
- 3 Select Shapes on Map (*required:*):
[Select Shapes] [Clear Selection]
☐ Download Press down to start and let go to finish

You have permissions to export highlighted counties.
For areas that are not highlighted contact your administrator for access.

[Next >](#)

9-1-1 GIS Repository – Map Viewer

Michigan.gov | MSP Home | FAQ | Online Services | MSP Site Map | Contact MSP

Application Contact |

911 GIS Data Repository

Search an address, city, zip, and more

911 Map | Status Map

Clear | Zoom Extents | Navigation Info

Layers

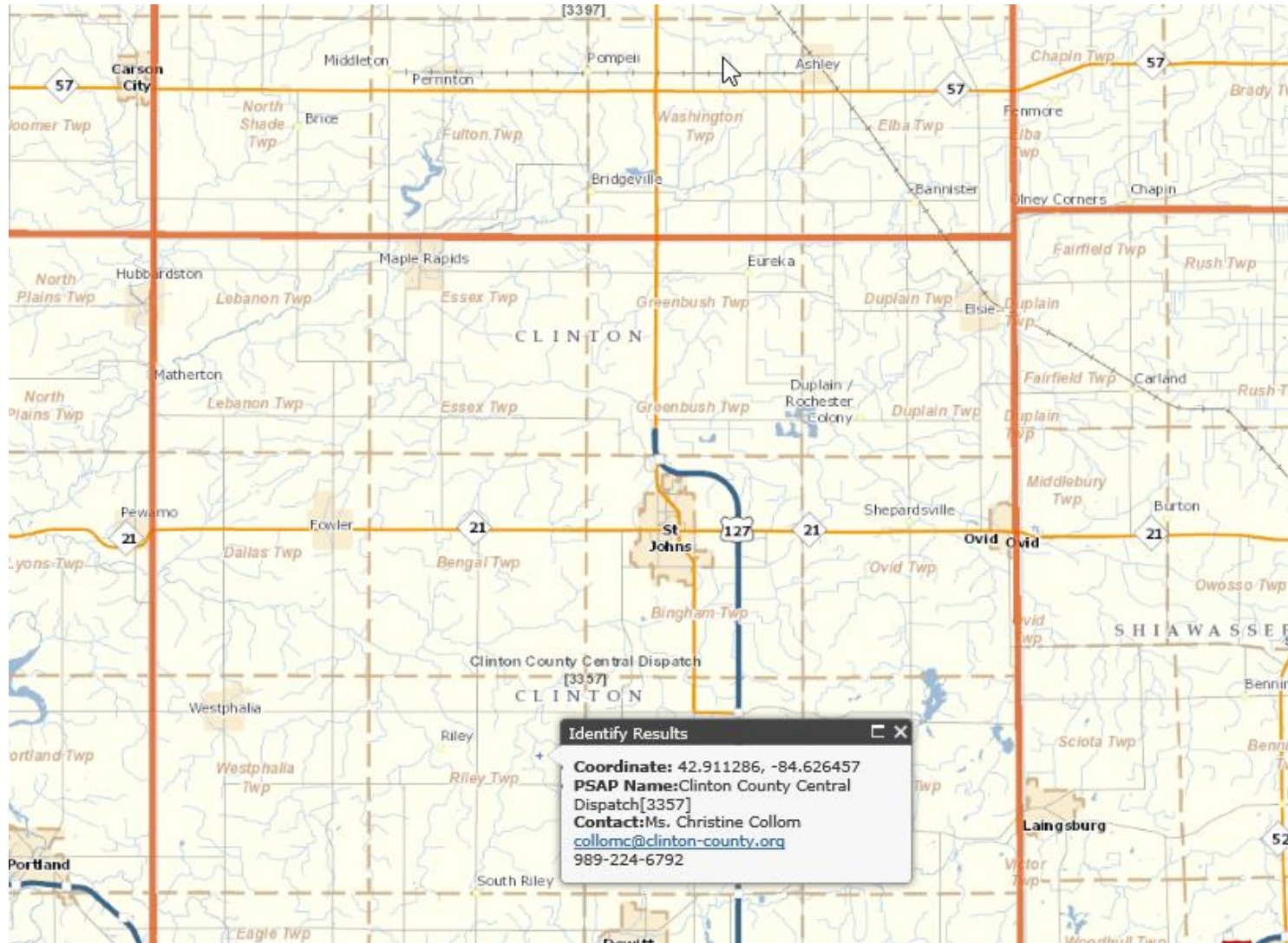
Toggle layer visibility by clicking the corresponding checkbox. Edit features on a layer by clicking the edit icon.

- ☒ Emergency Service Zone
- ☐ Structure
- ☒ Centerline
 - All Other Values
 - Limited Access Road
 - U.S. and State Highway
 - Local Road
 - Other Addressable Road
 - Driveway
 - Trail
- ☒ PSAP
 - Staged Data
- ☐ Sketches
 - Sketch Address
 - Sketch PSAP
 - Sketch Road

0 30 60mi

The map displays the state of Michigan with various 911 service areas and road networks. The Great Lakes (Lake Superior, Lake Michigan, Lake Huron, Lake Erie) are shown in blue. The state's outline is in orange. Major cities and towns are labeled, including Ironwood, Houghton, Marquette, Sault Ste. Marie, Escanaba, Iron Mountain, Manistique, St Ignace, Petoskey, Alpena, Frankfort, Adella, West Branch, Tawas City, Ludington, White Cloud, Mt Pleasant, Standish, Muskegon, Grand Rapids, Holland, South Haven, Holland, Jackson, Coldwater, Adrian, and Monroe. The map includes a scale bar (0 to 60 miles) and a north arrow. A legend on the left lists layers: Emergency Service Zone, Structure, Centerline (with sub-categories: All Other Values, Limited Access Road, U.S. and State Highway, Local Road, Other Addressable Road, Driveway, Trail), PSAP (with sub-category: Staged Data), and Sketches (with sub-categories: Sketch Address, Sketch PSAP, Sketch Road). The map is titled '911 GIS Data Repository' and includes a search bar and navigation controls.

9-1-1 GIS Repository – Map Viewer Tools



9-1-1 GIS Repository

STATE OF MICHIGAN GIS REPOSITORY USER REQUEST

To register application users, the PSAP Director must provide the information in this table and return it via e-mail to armitagem@michigan.gov or fax it to (517) 241-0387, Attn: Mr. Michael Armitage. A description of each role is provided below the table.

911 Repository Role	Name	Organization	Email and phone #
PSAP Administrator			
Alternate PSAP Administrator(s) (Optional)			
Data Importer(s)			
Data Exporter(s)			
Restricted Administrator			

Name:

Signature:

If you have any questions or concerns about this process, please contact:
Mr. Michael Armitage, armitagem@michigan.gov at MSP at (517) 241-2809, fax (517) 241-0387 or
Mr. Mark Holmes, holmesm3@michigan.gov at CSS at (517) 373-7910, fax (517) 373-2939.

PSAP Administrator – This role is established for the person who will be managing the accounts for the users within a specific PSAP jurisdiction. This role will typically be assigned to the 911 Director. This access is limited to PSAPs that are a branch of the entity that is party to the 'memorandum of understanding' for the 911 GIS Repository.

Alternate PSAP Administrator(s) (optional) – This role is established for a person to provide a backup role to the PSAP Administrator for assigning logins or accounts. This role will have the same permissions level in the system as the PSAP Administrator.

Data Importer(s) – This role is established for a person who will be providing GIS data updates to the repository system. This role can be assigned to a PSAP staff member, county GIS department staff member or a vendor. This role is typically assigned to the person who is maintaining the GIS data.

Data Exporter(s) – This role is established for a person who will be extracting GIS data from the repository for 911 purposes on a regular basis. For example, the data exporter might be the person who typically integrates GIS data with existing CAD systems.

Restricted Administrator – This role is established as a 'view only' for PSAPs that are not a branch of the government which is party to the 'memorandum of understanding' for the 911 GIS Repository.

Continued GIS Coordination across Michigan

- Create data once, use many times
- Data from authoritative sources
- Data classification by data owners
- Regular data updates and maintenance
- Effective metadata
- Partnerships and data sharing agreements
- Consistent data for decision making
 - Local, state, federal, public
- Continued standardization and process improvement

Questions



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